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EXAMINER

GARCIA OTERO, EDUARDO

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/333,379

Applicant(s)

HAGENBUCH ET AL.

Examiner

Eduardo Garcia-Otero

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003 and 21 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26,28-38 and 52-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26,28-38 and 52-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 19.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION: Final Action

Introduction

1. Title is: PROCESS FOR THREE-DIMENSIONAL MODELING AND DESIGN OF OFF-HIGHWAY DUMP BODIES
2. First named Inventor is: HABENBUCH.
3. Claims 1-26, 28-38, 52-60 are pending.

Applicant's REMARKS

4. INTERVIEW OF OCTOBER 1, 2003. Applicant presented substantial publications, which have been submitted by IDS. The Examiner appreciates the exceptionally broad and thorough set of publications. None of said publications discloses the previously indicated potentially allowable subject matter of the present application.
5. INTERVIEW OF JANUARY 5, 2004. Interview summary is mailed with this action, and states:

09/333,379 regarding tephone interview on 1/5/04.

Applicant stated than an Information Disclosure Statement (IDS) had been submitted to PTO on 11/03/03, but that the Applicant's reply to the pending office action had not yet been submitted. The Examiner stated that said recent IDS would be considered with Applicant's reply in preparing the next office action (final office action), and that said IDS did not seem essential to have in the Examiner's hand while performing the present telephonic interview. All of the publications in said IDS had been viewed at previous personal interview of 10/1/03. Thus, the interview proceeded without the IDS in hand.

Further, the Assistant Examiner indicated possiblity of allowance regarding claim 1 if modified to measure the angle of repose of at least the front slope, and at least one of the side slopes, because no prior art indicates that said front may be different from said side.

Assistant Examiner also indicated increased possibility of allowance if the load modeling limitation of truncating the top of the load (a plateau) was combined with the limitation of regarding segmentational rounding of the corners . Such a combination might be non-obvious.

6. OTHER ISSUES. The other issues in Applicant's remarks have already been discussed in detail in the prior office action, and the record is clear.
7. The rejections are repeated below, modified in view of the amendments.

Proposed amendments: potentially allowable subject matter

8. Applicant's original disclosure indicates at least two potentially allowable inventions.
9. First, the asymmetry between the front, first side, and second side angles of repose in material hauled in trucks is not disclosed in the prior art.

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10. Claim 1 (currently amended) states “from at least two of a group consisting of the body front wall, the body rear edge or one of the two body sidewalls”. Said proposed term is interpreted as choosing at least two from a group of three items: the body front wall, the body rear edge, one of the two body sidewalls. Said interpretation is disclosed by the previously discussed prior art which show the rear as being asymmetric with respect to the front and asymmetric with respect to both sides. Specifically, measuring the front and the rear is implicitly disclosed by the prior art (and the group of front and rear is one possible combination of the claim 1 limitation).
11. However, all of the prior art discloses/requires symmetry between the front and both sides, so it would be non-obvious to measure more than one of these three (front and both sides), and would be supported by the original disclosure.
12. The above discussion of claim 1 also applies to claims 21 and 52 and 60.
13. The second potentially allowable embodiment regards the modeling the volumetric load using a truncated peak (plateau) of independent claim 31 combined the segmented corners of dependent claim 38.

Other amendments

14. The substantial amendments to claims 1 and 21 and 52 and 60 have been discussed above.
15. Applicant also proposes amendments to claim 2 (minor), claim 7 (minor), claim 8 (minor), claim 11 (minor), claim 15 (substantial), claim 16 (substantial), claim 17 (substantial), claim 22 (minor), claim 31 (substantial), claim 32 (minor), claim 37 (minor), claim 38 (minor).
16. The prior art rejections are repeated below, amended in view of the claim amendments.

Secondary Consideration: commercial success

17. SIGNIFICANT COMMERCIAL SUCCESS (SECONDARY CONSIDERATIONS). At the interview of 11/25/02, Applicant asserted significant commercial success of the invention, stating that Philippi-Hagenbuch (assignee) has sold approximately 60 dump bodies designed using the inventive process. The Examiner notes that a picture of a custom designed dump body, in use, was shown during the interview of 11/25/02. The Examiner further notes that custom (point of use, and asymmetric angles of repose) designed dump bodies appear to be an entirely new market (or sub-market), and that these large dump bodies are very expensive

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items. In view of these facts, the Examiner attaches substantial weight to this secondary consideration, and will keep it in mind while examining this application.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action: A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
19. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
- Determining the scope and contents of the prior art.
 - Ascertaining the differences between the prior art and the claims at issue.
 - Resolving the level of ordinary skill in the pertinent art.
 - Considering objective evidence present in the application indicating obviousness or nonobviousness.
20. **Claims 1-26, 28-38, 52-60 are rejected under 35 U.S.C. 103(a) as being unpatentable.**
21. **Claim 1 (currently amended) is rejected under 35 U.S.C. 103(a) as being unpatentable over Hagenbuch US Patent 5,887,914 in view of Caterpillar Inc., Product Division, Field Representative Information Release, N149F "769 Series B Truck," 08/24/66, p. 1-21, and *In re Rinehart* (Legal Precedent for scaling).**
22. **Claim 1 (currently amended) is an independent claim with 8 limitations.**
23. Note that Hagenbuch US Patent 5,887,914 has a different inventive entity (LeRoy G. Hagenbuch) than the inventive entity of the present application (Leroy G. Hagenbuch and Philip T. Brinkman). Thus, Hagenbuch '914 constitutes 102(e) type prior art that may be used in a 103(a) rejection. Additionally, note that the MPEP 706.02(k) exclusion of 102(e) prior art assigned to the same person does not apply because this application was filed before November 29, 1999 (on June 15, 1999).
24. (c) **"determining a desired location for a load center of gravity"** is disclosed by Hagenbuch '914 at FIG 14A Step 2 "Calculate correct load placement center of gravity".

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25. (d) **“determining a desired volumetric capacity for the body”** is disclosed by Hagenbuch ‘914 at FIG 14B Step 8c “Dose (sic) trial load volume match maximum desired load...?”
26. (e) **“initial line for a floor..front wall...inside body width”** is disclosed by Hagenbuch ‘914 at FIG 9A “body floor line”, FIG 9B “front slope line”, and FIG 10A “inside body width”.
27. (g) **“adjusting a set of design parameters of the body until the load model center of gravity is located proximate the desired location...”** is disclosed by Hagenbuch ‘914 at FIG 14B Steps 8f “Too far forward” through Step 8m “Move Slope Components Rearward”.
28. (h) **“producing the body in accordance with the set of design parameters”** is disclosed by Hagenbuch ‘914 at FIG 14B Step 9 “DESIGN COMPLETED”.
29. Hagenbuch ‘914 does not appear to explicitly disclose the remaining limitations.
30. (a) **“determining an anticipated point of use for the vehicle”** is disclosed by Caterpillar Inc., Product Division, Field Representative Information Release, N149F “769 Series B Truck,” 08/24/66, Page 6 first full paragraph “While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B” and *In re Rinehart* (Legal Precedent for scaling).
31. *In re Rinehart*, 531 F.2d 1048, 1953, 189 USPQ 143, 148 (CCPA 1976) states “mere scaling up of a prior art process capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process so scaled”. See MPEP 2144.04(IV)(A). Similarly, mere scaling down of the data set size (capable of being scaled down) would not establish patentability. This is particularly true here because Caterpillar specifically discloses the variations in field weight distribution with loading techniques and material characteristics. Improvements in CAD now apparently make it economically feasible to design bodies at individual points of use, but this mere difference in scale does not appear to be patentable.
32. (b) **“collecting data from the anticipated point of use”** is disclosed by Caterpillar Inc. (Release N149F) and *In re Rinehart* (Legal Precedent for scaling), as discussed above in limitation (a).
33. Also in (b), Claim 1 (currently amended) states “from at least two of a group consisting of the body front wall, the body rear edge or one of the two body sidewalls”. Said proposed

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term is interpreted as choosing at least two from a group of three items: the body front wall, the body rear edge, one of the two body sidewalls. Said interpretation is disclosed by the previously discussed prior art which show the rear as being asymmetric with respect to the front and asymmetric with respect to both sides. Specifically, measuring the front and the rear is implicitly disclosed by the prior art (and the group of front and rear is one possible combination of the claim 1 limitation).

34. However, all of the prior art discloses/requires symmetry between the front and both sides, so it would be non-obvious to measure more than one of these three (front and both sides), and would be supported by the original disclosure.
35. (f) **“developing a three dimensional volumetric model of a load to be carried in the body...”** is disclosed by Caterpillar Inc. (Release N149F), Page 6 first full paragraph “While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B.”
36. **At the time** the invention was made, it would have been obvious to a person of ordinary skill in the art to use Caterpillar Inc. (Release N149F) and *In re Rinehart* (Legal Precedent for scaling), to modify Hagenbuch’914. One of ordinary skill in the art would have been motivated to do this to more accurately match the body design to the “loading techniques and material characteristics” by designing based on a smaller and more specific heaped load pattern data set.
37. **MOTIVATION ADDITIONAL DISCUSSION—INTIMATELY RELATED PRIOR ART.**
Note that the Hagenbuch’914 and Caterpillar N149F publications are focused on precisely the same problem, modeling off-road truck loads. Thus, they are intimately related. This intimate relationship goes far beyond the minimum “same field of invention” or “same problem”. They are both focused on precisely the same problem in precisely the same field, which strengthens the obviousness rejection.
38. **MOTIVATION ADDITIONAL DISCUSSION—SOME IMPLICIT DISCLOSURE.**
Further, the above rejection states that Hagenbuch’914 “does not appear to explicitly disclose” steps (a) and (b) and (f). However, there appears to be some amount of implicit

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disclosure of these limitations in Hagenbuch'914, which strengthens the obviousness rejection. Specifically:

39. Step (a) states “**determining an anticipated point of use for the vehicle**”. Hagenbuch'914 states “in the working environment of a coal mine... Overburden, which is the earth (rock and dirt) which must be removed in surface coal mining operations to expose the coal seams for mining, typically has a greater density than the coal being mined” at Column 1 line 14. This Hagenbuch'914 statement is very similar to the Caterpillar publication which states “While field weight distribution will vary, depending upon loading techniques and material characteristics” at Page 6. The point is that the Caterpillar prior art has very similar concepts to those disclosed in Hagenbuch'914, and therefore it takes very little motivation to combine them.

40. Similarly, step (b) states “**collecting data from the anticipated point of use**”.

Hagenbuch'914 states “in the working environment of a coal mine... Overburden, which is the earth (rock and dirt) which must be removed in surface coal mining operations to expose the coal seams for mining, typically has a greater density than the coal being mined” at Column 1 line 14. This Hagenbuch'914 statement is very similar to the Caterpillar publication which states “While field weight distribution will vary, depending upon loading techniques and material characteristics” at Page 6. The point is that the Caterpillar prior art has very similar concepts to those disclosed in Hagenbuch'914, and therefore it takes very little motivation to combine them. Also note that Caterpillar's term “field” implies making measurements at actual or anticipated points of use.

41. Similarly, step (f) states “**developing a three dimensional volumetric model of a load to be carried in the body...**”. Hagenbuch'914 states “loaded 3:1 heap Light material” and “loaded 2:1 heap Dense material” at FIG 11C. This Hagenbuch'914 statement is very similar to the Caterpillar publication which states “While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B.” at page 6. The point is that the Caterpillar prior art has very similar

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concepts to those disclosed in Hagenbuch'914, and therefore it takes very little motivation to combine them.

42. MOTIVATION ADDITIONAL DISCUSSION—*IN RE RINEHART*. Similar to the above discussion, there is a certain amount of implicit disclosure (or at least hinting) in Hagenbuch'914 and in Caterpillar publication towards measuring and designing for a single point of use (scaling). Hagenbuch'914 explicitly distinguishes overburden at a coal mine from the coal seam at a coal mine, and thus explicitly distinguishes between the point above the coal seam and the point in the coal seam. Further, by specifically stating “coal mine”, Hagenbuch implies that copper mines may have different densities, and different needs. Coal is a rather unique material to mine because it contains substantial organic matter (hydrocarbons), unlike copper ore in South America.
43. Similarly, Caterpillar explicitly states “depending upon loading techniques and material characteristics” and then (almost apologetically) lumps these different factors into a single 1.7:1 heaped load pattern (instead of the standard SAE model). Thus, Caterpillar appears aware of the importance of loading techniques and material characteristics, and also clearly discloses the inadequacy of using the SAE model when experimental data is available.
44. Thus, the use of *In re Rinehart* for scaling is strongly supported by the rich context of the prior art.
45. **In conclusion, the combination of Hagenbuch'914 and Caterpillar and *In re Rinehart* must be considered in the context of each entire publication, and in the eyes of one of ordinary skill in the art.**
46. Claim 2 (currently amended) depends from Claim 1 with one additional limitation, thus is rejected for the same reasons plus these additional reasons.
47. “design parameters of the body includes a position of the body floor and a position of body sidewalls” is disclosed by Hagenbuch '914 at FIG 9A “body floor line” and FIG 10A “inside body width”.
48. Claim 3 (original) depends from Claim 2 with one additional limitation, thus is rejected for the same reasons plus these additional reasons.
49. **“position of the body floor includes a length of the floor”** is disclosed by Hagenbuch '914 at FIG 14B “Establish maximum overall body dimensions”.

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50. Claim 4 (original) depends from Claim 2 with one additional limitation, thus is rejected for the same reasons plus these additional reasons.
51. **“position of the body sidewalls includes a height of the sidewalls”** is disclosed by “Euclid Inc., Form 12-015 “Euclid R-85 Specifications”, 08/77 on Page 4 “the low loading height of 14-4” (4369 mm) allows sufficient clearance to cleanly deposit a full bucket load”.
52. Claim 5 (original) depends from Claim 4 with one additional limitation, thus is rejected for the same reasons plus these additional reasons.
53. **“distance between the respective sidewalls”** is disclosed by **Form 12-015 “Euclid R-85 Specifications,” 08/77** at Page 4 “14’-10” 4521 mm”.
54. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use “Euclid Inc., Form 12-015 “Euclid R-85 Specifications” and Caterpillar Inc., Product Division, Field Representative Information Release, N149F “769 Series B Truck,” 08/24/66, to modify Hagenbuch ‘914.
55. Claim 6 (original) depends from Claim 2 with one additional limitation, thus is rejected for the same reasons plus these additional reasons.
56. **“position of the body front wall”** is disclosed by **Form 12-015 “Euclid R-85 Specifications,” 08/77** at Page 4 in the detailed dimensional drawings.
57. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use “Euclid Inc., Form 12-015 “Euclid R-85 Specifications” and Caterpillar Inc., Product Division, Field Representative Information Release, N149F “769 Series B Truck,” 08/24/66, to modify Hagenbuch ‘914.
58. Claim 7 (currently amended) depends from Claim 4 with one additional limitation, thus is rejected for the same reasons plus these additional reasons.
59. **“adjust the length of the body floor and the height of the body sidewalls to provide the lowest practical vertical location for the center of gravity”** is disclosed by Hagenbuch ‘914 at FIG 14A Step 6b “Dose (sic) trial load center of gravity match correct load center of gravity?” and alternately disclosed by Caterpillar Inc., Brochure AEO26730 “Caterpillar 769 Series B” at page 15 second paragraph “lower the center of gravity of the truck”.
60. Claim 8 (currently amended) depends from Claim 1, with one additional limitation.

61. **“data collected from the anticipated point of use includes angles of material repose”** is disclosed by Caterpillar Inc., Product Division, Field Representative Information Release, N149F “769 Series B Truck,” 08/24/66, at Page 6 second paragraph “While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B”.
62. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use RELEASE NO. N149F, TITLE 769 SERIES B TRUCK, DATE AUGUST 24, 1996 to modify Hagenbuch ‘914.
63. Claim 9 (original) depends from Claim 8, with one additional limitation.
64. **“angles of material repose include a front angle of material repose, a rear angle of material repose and side angles of material repose”** is disclosed by Caterpillar Inc., Product Division, Field Representative Information Release, N149F “769 Series B Truck,” 08/24/66, at Page 6 second paragraph “While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B”. Note that this “1.7:1 heaped load pattern” indicates a specific (and constant) angle of repose for front, rear, and sides. Further note that this claim does not specify different angles of material repose. If different angles of material repose were claimed, then this claim would not be anticipated.
65. Claim 10 (previously presented) depends from Claim 9, with one additional limitation.
66. **the data collected from the anticipated point of use further includes a representation of an actual load carried in an existing vehicle body** is disclosed by Caterpillar Inc. (Release N149F) and *In re Rinehart* (Legal Precedent for scaling), as discussed above in Claim 1 (twice amended) limitation (a).
67. Claim 11 (currently amended) depends from claim 10, with one additional limitation.
68. **the data collected from the anticipated point of use includes angles of material repose and representations of corner voids present in the corners of existing vehicles** is

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disclosed by Caterpillar Inc. (Release N149F) and *In re Rinehart* (Legal Precedent for scaling), as discussed above in Claim 1 (twice amended) limitation (a). Note the corner voids are the empty spaces between the load and the truck body. Thus, the voids are inherently defined by the representation of the load.

69. Claim 12 (previously presented) depends from claim 1, with one additional limitation.

70. **the data collected from the anticipated point of use includes a density of the load material** is disclosed by Caterpillar Inc. (Release N149F) and *In re Rinehart* (Legal Precedent for scaling), as discussed above in Claim 1 (twice amended) limitation (a). Note that “actual weight” and “load shapes” (load volumes) are inherently related by the density of the load material. Specifically, weight equals volume times density.

71. Claim 13 (previously presented) depends from claim 1, with one additional limitation.

72. **the data collected from the anticipated point of use includes a method used for loading material into an existing vehicle body the data collected from the anticipated point of use includes a density of the load material** is disclosed by Caterpillar Inc. (Release N149F) and *In re Rinehart* (Legal Precedent for scaling), as discussed above in Claim 1 (twice amended) limitation (a). Note that “depending on loading techniques” inherently discloses both the material providing device (bucket or similar) and the material receiving device (vehicle body).

73. Claim 14 (previously presented) depends from claim 10, with one additional limitation.

74. **developing the three dimensional volumetric load model to account for corner voids in the vehicle body** is disclosed by Caterpillar Inc. (Release N149F) and *In re Rinehart* (Legal Precedent for scaling), as discussed above in Claim 1 (twice amended) limitation (a). Note the corner voids are the empty spaces between the load and the truck body. Thus, the voids are inherently defined by the representation of the load.

75. Claim 15 (currently amended) depends from claim 14, with one additional limitation.

76. **the three dimensional volumetric load model is developed through a gradual incremental blending of the respective side angles of material repose to the front angle of material repose and a gradual incremental blending of the respective side angles of material repose to the rear angle of material repose** is disclosed by the well known primitive shape of a cone. The Examiner takes official notice that it is well known in the art

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that granular material dropped in a large pile from a single fixed discharge point onto a flat surface forms a cone with a single angle of repose. Most children in a sandbox have witnessed this experiment. Thus, a conical load shape is well known. Note that this claim is disclosed by a simple cone because different angles of repose have not been required. If this claim were amended to require different angles of repose, then it would not be disclosed by a simple cone.

77. The Applicant is entitled to traverse the official notice according to MPEP § 2144.03.

However, MPEP § 2144.03 further states “See also *In re Boon*, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice).” Specifically, *In re Boon*, 169 USPQ 231, 234 states “as we held in *Ahlert*, an applicant must be given the opportunity to challenge either the correctness of the fact asserted or the notoriety or repute of the reference cited in support of the assertion. We did not mean to imply by this statement that a bald challenge, with nothing more, would be all that was needed”. Further note that 37 CFR § 1.671(c)(3) states “Judicial notice means official notice”. Thus, a traversal by the Applicant that is merely “a bald challenge, with nothing more” will be given very little weight.

78. Claim 16 (currently amended) depends from claim 14, with one additional limitation.

79. **“comparing the three dimensional volumetric load model with the representation of the actual load information collected at the anticipated point of use and adjusting the three dimensional volumetric model as necessary such that the three dimensional volumetric load model substantially compares with the representation of the actual load information collected at the anticipated point of use”** is disclosed by Caterpillar Inc. (Release N149F) and *In re Rinehart*.

80. Caterpillar Inc. (Release N149F), Page 6 first full paragraph states “While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B.” Thus, Caterpillar discloses a three dimensional volumetric load model substantially matching the actual loads.

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81. *In re Rinehart*, 531 F.2d 1048, 1953, 189 USPQ 143, 148 (CCPA 1976) states “mere scaling up of a prior art process capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process so scaled”. See MPEP 2144.04(IV)(A). Similarly, mere scaling down of the data set size (capable of being scaled down) would not establish patentability. This is particularly true here because Caterpillar specifically discloses the variations in field weight distribution with loading techniques and material characteristics. Improvements in CAD now apparently make it economically feasible to design bodies at individual points of use, but this mere difference in scale does not appear to be patentable.
82. Claim 17 (currently amended) depends from claim 15, with one additional limitation.
83. This claim is rejected because it depends from a rejected claim, but is otherwise allowable because of “**changes in the angles of material repose**”. This apparently requires different angles of repose as a function of the orientation (for example, front angle of repose different from side angle of repose).
84. Claim 18 (previously presented) depends from claim 1, with one additional limitation.
85. “**modeling corner voids of the hauled material into the three dimensional volumetric load model**” is disclosed by Caterpillar Inc. (Release N149F), Page 6 first full paragraph “While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B.” Note that stating a glass is half full inherently discloses that the remainder of the glass is empty (void). Thus, disclosing a load shape inherently discloses the corner voids.
86. Claim 19 (previously presented) depends from Claim 1 with one new limitation, thus is rejected for the same reasons plus these additional reasons.
87. “**adjusting the set of design parameters to provide the lowest practical vertical location for the center of gravity**” is disclosed by Caterpillar Inc., Brochure AE026730 “Caterpillar 769 Series B,” Applicants believe available in 1967 at Page 15 second paragraph “The V-shaped bottom of the body also serves to lower the center of gravity of the truck, giving the 769B greater stability.

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88. Claim 20 (previously presented) depends from Claim 1 with one new limitation, thus is rejected for the same reasons plus these additional reasons.
89. **“adjusting the set of design parameters to allow material to be loaded into the dump body from the lowest practical vertical location”** is disclosed by Caterpillar Inc., Brochure AE026730 “Caterpillar 769 Series B,” Applicants believe available in 1967 at Page 15 first paragraph “Body height is 9’8” (2946 mm) allowing more than a foot (305 mm) of clearance for loading by a Cat 988 Wheel Loader.”
90. **Claim 21 is rejected under 35 U.S.C. 103(a)** as being unpatentable over Hagenbuch US Patent 5,887,914 in view of Caterpillar Inc., Product Division, Field Representative Information Release, N149F “769 Series B Truck,” 08/24/66, p. 1-21, and *In re Rinehart* (Legal Precedent for scaling).
91. Claim 21 (currently amended) is an independent claim, with 6 limitations.
92. (a) **“determining a desired location for a load center of gravity”** is disclosed by Hagenbuch ‘914 at FIG 14A Step 2 “Calculate correct load placement center of gravity”.
93. (b) **“determining a desired volumetric capacity for the body”** is disclosed by Hagenbuch ‘914 at FIG 14B Step 8c “Dose (sic) trial load volume match maximum desired load...”
94. (c) **“initial line for a floor..front wall...inside body width”** is disclosed by Hagenbuch ‘914 at FIG 9A “body floor line”, FIG 9B “front slope line”, and FIG 10A “inside body width”.
95. (d) **“developing a three dimensional volumetric model of a load to be carried in the body...”** is disclosed by Caterpillar Inc. (Release N149F), Page 6 first full paragraph “While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B.”
96. Also for (d), see above discussion of claim 1 limitation (b) regarding suggested amendment.
97. (e) **“adjusting a set of design parameters of the body until the load model center of gravity is located proximate the desired location...”** is disclosed by Hagenbuch ‘914 at FIG 14B Steps 8f “Too far forward” through Step 8m “Move Slope Components Rearward”.
98. (f) **“producing the body in accordance with the set of design parameters”** is disclosed by Hagenbuch ‘914 at FIG 14B Step 9 “DESIGN COMPLETED”.

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99. **At the time** the invention was made, it would have been obvious to a person of ordinary skill in the art to use Caterpillar Inc. (Release N149F) and *In re Rinehart* (Legal Precedent for scaling), to modify Hagenbuch'914. One of ordinary skill in the art would have been motivated to do this to more accurately match the body design to the "loading techniques and material characteristics" by designing based on a smaller and more specific heaped load pattern data set.
100. Claims 22-26. These claims do not introduce any limitations not previously discussed, thus are rejected for the same reasons given above for the same limitations.
101. Claim 27 is cancelled.
102. Claim 28 (previously presented) depends from claim 21, with 1 additional limitation.
103. **conical shape of an actual load** is disclosed by the well known primitive shape of a cone. The Examiner takes official notice that it is well known in the art that granular material slowly dropped in a large pile from a single fixed discharge point onto a flat surface forms a cone with a single angle of repose. Most children in a sandbox have witnessed this phenomenon. A sand hourglass is another well known example. Thus, a conical load shape is well known. Note that this claim is disclosed by a simple cone because different angles of repose have not been required. If this claim were amended to require different angles of repose, then it would not be disclosed by a simple cone. See claim 17 (amended).
104. **At the time** the invention was made, it would have been obvious to a person of ordinary skill in the art to use Official Notice (cones) to modify Hagenbuch'914 in order to accurately model loads for granular materials. Note that modern CAD makes the volumetric and center of gravity calculations for truncated cones (truncated by intersections with the dump body) more feasible, rather than being limited to the flat planes of the old standards.
105. Claim 29 (previously presented) depends from claim 21, with 1 additional limitation.
106. **lowest practical vertical location for the center of gravity of the three dimensional model of the hauled material** is disclosed by Caterpillar Inc., Brochure AE026730 "Caterpillar 769 Series B," Applicants believe available in 1967 at Page 15 second paragraph "The V-shaped bottom of the body also serves to lower the center of gravity of the truck, giving the 769B greater stability", and is disclosed by official notice. It is well known in the

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art that a low center of gravity is more stable (if the other parameters remain constant), and thus preferable for vehicles.

107. Claim 30 (previously presented) depends from claim 21, with 1 additional limitation.
108. **allow the material to be loaded into the dump body from the lowest practical vertical location** is disclosed by Caterpillar Inc., Brochure AE026730 "Caterpillar 769 Series B," Applicants believe available in 1967 at Page 15 first paragraph "Body height is 9'8" (2946 mm) allowing more than a foot (305 mm) of clearance for loading by a Cat 988 Wheel Loader."
109. **Claim 31 (new) is rejected under 35 U.S.C. 103(a)** as being unpatentable over Hagenbuch US Patent 5,887,914 in view of Caterpillar Inc. (Release N149F) and MPEP 2144.04(II)(A) and Official notice of cones.
110. Claim 31 (currently amended) is an independent claim with 6 limitations.
111. (a)"**determining a desired location for a load center of gravity**" is disclosed by Hagenbuch '914 at FIG 14A Step 2 "Calculate correct load placement center of gravity".
112. (b)"**determining a desired volumetric capacity for the body**" is disclosed by Hagenbuch '914 at FIG 14B Step 8c "Dose (sic) trial load volume match maximum desired load...?"
113. (c)"**initial line for a floor..front wall...inside body width**" is disclosed by Hagenbuch '914 at FIG 9A "body floor line", FIG 9B "front slope line", and FIG 10A "inside body width".
114. (e)"**adjusting a set of design parameters of the body until the load model center of gravity is located proximate the desired location...**" is disclosed by Hagenbuch '914 at FIG 14B Steps 8f "Too far forward" through Step 8m "Move Slope Components Rearward".
115. (f)"**producing the body in accordance with the set of design parameters**" is disclosed by Hagenbuch '914 at FIG 14B Step 9 "DESIGN COMPLETED".
116. Hagenbuch '914 does not appear to expressly disclose the remaining limitation.
117. (d part 1)"**three dimensional volumetric load model that includes corner voids**" is disclosed by Caterpillar Inc. (Release N149F), Page 6 first full paragraph "While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer

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to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B.” Note that voids are the empty spaces between the volumetric load model and the walls of the truck. Thus, defining the volumetric load model inherently discloses the voids. For example, defining a glass as half full inherently defines the remaining part of the glass as empty.

118. (d part 2)“**and a truncated peak of the three dimensional volumetric model**” is disclosed by MPEP 2144.04(II)(A). Specifically, *In re Larson*, 340 F.2d 965, 144 USPQ 347, 350 (CCPA 1965) states “If this additional features is not desired, it would seem a matter of obvious choice to eliminate it and the function it serves”. See MPEP 2144.04(II)(A) “Omission of an Element and Its Function Is Obvious If the Function of the Element Is Not Desired”.
119. The term “truncated peak” is interpreted as a plateau on the top of the model.
120. **At the time** the invention was made, it would have been obvious to a person of ordinary skill in the art to use Caterpillar Inc. (Release N149F) and MPEP 2144.04(II)(A) to modify Hagenbuch’914 in order to accurately model loads.
121. Claims 32 to claim 36. These claims do not introduce any new limitations, thus are rejected for the same reasons given above for the same limitations.
122. Claim 37 (currently amended) depends from claim 31, with 1 additional limitation.
123. **the three dimensional volumetric load model is developed through a gradual incremental blending of the respective side angles of material repose to the front angle of material repose and a gradual incremental blending of the respective side angles of material repose to the rear angle of material repose through respective rounded corners of the three-dimensional model of the hauled material** is disclosed by the well known primitive shape of a cone. The Examiner takes official notice that it is well known in the art that granular material dropped in a large pile from a single fixed discharge point onto a flat surface forms a cone with a single angle of repose (for example, sand in an hourglass). Most children in a sandbox have witnessed this experiment. Thus, a conical load shape is well known. Note that this claim is disclosed by a simple cone because different angles of repose have not been required. If this claim were amended to require different angles of repose, then it would not be disclosed by a simple cone.

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124. Additionally, the Examiner takes official notice that the sandpile in an hourglass does not form a sharp point at the top, but rather a blunt top or rough plateau.
125. Claim 38 (currently amended) is not rejected against prior art, and would be allowable if rewritten as an independent claim including the limitations of the base claim and intervening claims.
126. Claims 39-51 have been cancelled.
127. **Claim 52 is rejected under 35 U.S.C. 103(a)** as being unpatentable over Hagenbuch US Patent 5,887,914 in view of Caterpillar Inc., Product Division, Field Representative Information Release, N149F “769 Series B Truck,” 08/24/66, p. 1-21, and *In re Rinehart* (Legal Precedent for scaling).
128. Claim 52 (currently amended) is an independent claim with 8 limitations.
129. Note that Claim 52 uses “representative point of use”, unlike “anticipated point of use” in Claim 1 (twice amended). However, the same art applies. “Representative point of use” implies a slightly larger scale than “anticipated point of use”.
130. (c)“**determining a desired location for a load center of gravity**” is disclosed by Hagenbuch ‘914 at FIG 14A Step 2 “Calculate correct load placement center of gravity”.
131. (d)“**determining a desired volumetric capacity for the body**” is disclosed by Hagenbuch ‘914 at FIG 14B Step 8c “Dose (sic) trial load volume match maximum desired load...?”
132. (e)“**initial line for a floor..front wall...inside body width**” is disclosed by Hagenbuch ‘914 at FIG 9A “body floor line”, FIG 9B “front slope line”, and FIG 10A “inside body width”.
133. (g)“**adjusting a set of design parameters of the body until the load model center of gravity is located proximate the desired location...**” is disclosed by Hagenbuch ‘914 at FIG 14B Steps 8f “Too far forward” through Step 8m “Move Slope Components Rearward”.
134. (h)“**producing the body in accordance with the set of design parameters**” is disclosed by Hagenbuch ‘914 at FIG 14B Step 9 “DESIGN COMPLETED”.
135. Hagenbuch’914 does not appear to explicitly disclose the remaining limitations.
136. (a)“**determining an representative point of use for the vehicle**” is disclosed by Caterpillar Inc., Product Division, Field Representative Information Release, N149F “769

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Series B Truck,” 08/24/66, Page 6 first full paragraph “While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B” and *In re Rinehart* (Legal Precedent for scaling).

137. *In re Rinehart*, 531 F.2d 1048, 1953, 189 USPQ 143, 148 (CCPA 1976) states “mere scaling up of a prior art process capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process so scaled”. See MPEP 2144.04(IV)(A). Similarly, mere scaling down of the data set size (capable of being scaled down) would not establish patentability. This is particularly true here because Caterpillar specifically discloses the variations in field weight distribution with loading techniques and material characteristics. Improvements in CAD now apparently make it economically feasible to design bodies at individual points of use, but this mere difference in scale does not appear to be patentable.
138. (b)“**collecting data from the representative point of use**” is disclosed by Caterpillar Inc. (Release N149F) and *In re Rinehart* (Legal Precedent for scaling), as discussed above in limitation (a).
139. Also for (b), see above discussion of claim 1 limitation (b) regarding suggested amendment.
140. (f)“**developing a three dimensional volumetric model of a load to be carried in the body...**” is disclosed by Caterpillar Inc. (Release N149F), Page 6 first full paragraph “While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B.”
141. **At the time** the invention was made, it would have been obvious to a person of ordinary skill in the art to use Caterpillar Inc. (Release N149F) and *In re Rinehart* (Legal Precedent for scaling), to modify Hagenbuch’914. One of ordinary skill in the art would have been motivated to do this to more accurately match the body design to the “loading techniques and

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material characteristics” by designing based on a smaller and more specific heaped load pattern data set.

142. Claims 53 (previously presented). This claim does not introduce any new limitations, thus is rejected for the same reasons given above for the same limitations.

143. Claim 54 (previously presented) depends from claim 52, with 1 additional limitation.

144. This claim is objected to as depending from a rejected claim, but is otherwise allowable because of **“angles of material repose of an actual load carried in an existing vehicle body”**. Note that the plural “angles” explicitly requires measurement of more than one angle, and in the context of the specification implicitly requires front, left, rear, and right angles to be measured.

145. Claims 55 (previously presented) to claim 59 (previously presented). These claims do not introduce any new limitations, thus are rejected for the same reasons given above for the same limitations.

146. MOTIVATION FOR ALL DEPENDENT CLAIMS

147. At the time of the invention, one of ordinary skill in the art would have been motivated to begin with Hagenbuch US Patent 5,887,914 for the fundamentals of volumetric and center of gravity dump body design, then look to industry literature from the industry leading manufacturer (Caterpillar Inc., Release N149F) for factors that affect the center of gravity (loading techniques and material characteristics), then look to Caterpillar AE026730 for body height clearance loading requirements, then look to basic geometry for primitive shapes that more accurately represent the load (cones like sand in an hourglass, and truncated cones), then look to *In re Rinehart* (Legal Precedent for scaling) to more accurately represent the loads by developing models based on smaller (and more specific) sets of data, then look to *In re Larson* (Legal Precedent for eliminating an element) to truncate the tops of the load models to more accurately represent the loads.

148. Note that Caterpillar Inc., Release N149F explicitly states that it is a gross approximation of many measurements, and clearly the sharp edges of the planar load model are an accepted (although undesired) mathematical simplification from the old days when center of gravity calculations were made by slide rule. Thus, limitations in this context related to making customized “point of use” models, or to “rounding edges” stem merely from new economic

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feasibility due to the advanced power of modern CAD programs, and are not patentable because they are routine expedients according to legal precedent and yield no unexpected results.

149. **Claim 60 (new) is rejected under 35 U.S.C. 103(a)** as being unpatentable over Hagenbuch US Patent 5,887,914 in view of Caterpillar Inc., Product Division, Field Representative Information Release, N149F “769 Series B Truck,” 08/24/66, p. 1-21, and *In re Rinehart* (Legal Precedent for scaling).
150. Claim 60 (currently amended) is an independent claim with 8 limitations.
151. (c) **“determining a desired volumetric capacity for the body”** is disclosed by Hagenbuch ‘914 at FIG 14B Step 8c “Dose (sic) trial load volume match maximum desired load...?”
152. (d) **“initial line for a floor..front wall...inside body width”** is disclosed by Hagenbuch ‘914 at FIG 9A “body floor line”, FIG 9B “front slope line”, and FIG 10A “inside body width”.
153. (f) **“adjusting a set of design parameters of the body until the volumen of the three dimensional volumetric model is substantially similar to the desired volumetric capacity”** is disclosed by Hagenbuch ‘914 at FIG 14B Step 8c “Dose (sic) trial load volume match maximum desired load...?”
154. (g) **“producing the body in accordance with the set of design parameters”** is disclosed by Hagenbuch ‘914 at FIG 14B Step 9 “DESIGN COMPLETED”.
155. Hagenbuch ‘914 does not appear to explicitly disclose the remaining limitations.
156. (a) **“determining an anticipated point of use for the vehicle”** is disclosed by Caterpillar Inc., Product Division, Field Representative Information Release, N149F “769 Series B Truck,” 08/24/66, Page 6 first full paragraph “While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B” and *In re Rinehart* (Legal Precedent for scaling).
157. *In re Rinehart*, 531 F.2d 1048, 1953, 189 USPQ 143, 148 (CCPA 1976) states “mere scaling up of a prior art process capable of being scaled up, if such were the case, would not

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establish patentability in a claim to an old process so scaled". See MPEP 2144.04(IV)(A). Similarly, mere scaling down of the data set size (capable of being scaled down) would not establish patentability. This is particularly true here because Caterpillar specifically discloses the variations in field weight distribution with loading techniques and material characteristics. Improvements in CAD now apparently make it economically feasible to design bodies at individual points of use, but this mere difference in scale does not appear to be patentable.

158. (b) "**collecting data from the anticipated point of use**" is disclosed by Caterpillar Inc. (Release N149F) and *In re Rinehart* (Legal Precedent for scaling), as discussed above in limitation (a).

159. Also for (b), see above discussion of claim 1 limitation (b) regarding suggested amendment.

160. (e) "**developing a three dimensional volumetric model of a load to be carried in the body...**" is disclosed by Caterpillar Inc. (Release N149F), Page 6 first full paragraph "While field weight distribution will vary, depending upon loading techniques and material characteristics, continuous analysis of actual weight studies, indicates normal load shapes are actually closer to a 1.7:1 heaped load pattern. Caterpillar has thus adopted the 1.7:1 heaped load shape to calculate published figures for the 769B."

161. **At the time** the invention was made, it would have been obvious to a person of ordinary skill in the art to use Caterpillar Inc. (Release N149F) and *In re Rinehart* (Legal Precedent for scaling), to modify Hagenbuch'914. One of ordinary skill in the art would have been motivated to do this to more accurately match the body design to the "loading techniques and material characteristics" by designing based on a smaller and more specific heaped load pattern data set from the anticipated point of use.

Patentable material

162. **ASYMMETRIC ANGLES OF REPOSE.** At present, the Examiner believes that this application contains substantial potentially patentable material. Specifically, Applicant has observed that front, left, rear, and right side angles of repose are different for material dumped on a truck. This variation is counterintuitive. This variation appears to contradict the well known radially symmetric conical shape formed by sand slowly dropped from a

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single point in a child's sandbox, or from sand dropped in an hourglass. Additionally, this variation (front, left, rear, right) is contradictory to industry standards for dump bodies, such as SAE J1363 NOV95. The reasons for this variation are complex, and beyond the scope of this examination.

163. The only hint that the Examiner can find of this type of variation or asymmetry is that said standard (SAE J1363 NOV95) uses two angles for the rear portion of the dump: a slope of 1/2 for the top of the rear, and a slope of 1/1 for the bottom of the rear. The reasoning for using these two angles for the two portions of the rear is not known. Nevertheless, asymmetry of the rear (with respect to the front and/or the sides) is disclosed.

164. **The Examiner has found no prior art where the front angle is different from the side angles (or where one side angle is different from the other side angle), and no legal precedent is applicable.**

165. Note that specification page 11 line 33 states "In most cases, the angles of material repose that run to the front, rear and sides of the dump body will all be somewhat different namely due to natural and impose angles of repose occurring as a result of the loading process". This disclosure is the basis for substantial patentable material. Specifically, asymmetric angles of repose between the front and sides, or between the sides, appears novel.

166. Further note that some IDS publications disclose competitors using load models with front asymmetric with respect to the sides, but said publications are not prior art because they are dated after the filing date of the present application.

167. TRUNCATION OF TOP COMBINED WITH SEGMENTATION OF CORNERS. The dependent claim 38 limitation of incremental blending by dividing the corners into equal segments, combined with the base independent claim 31 limitation of truncated peak, appears to be a non-obvious combination in the context of the other limitations.

Conclusion

168. All pending claims stand rejected.

169. The original disclosure contains substantial allowable material. The Examiner suggests the following procedure in order to place the claims in condition for allowance.

170. First, independent claims 1, 21, 52, and 60 should be amended as discussed above regarding claim 1 limitation (b).

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171. All of the prior art discloses symmetry between the front and both sides (identical angles of repose), so it would be non-obvious to measure more than one of these three (front and both sides), and it would be non-obvious to design truck bodies based on a volumetric load that did not have identical angles of repose for the front and both sides.
172. Second, dependent claim 38 would be allowable if rewritten as an independent claim including the limitations of the base claim and intervening claims.
173. **Third, after the above suggested amendments, claims 1-26, 28-30, 38, and 52-60 would be allowable. Claims 31-37 would still be rejected.**

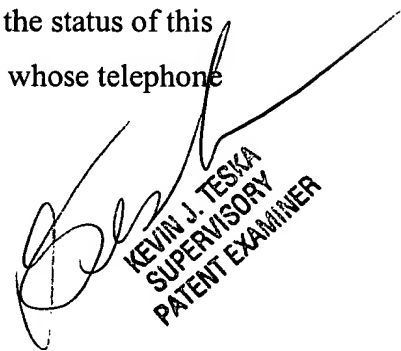
Response to Amendments or new IDS-FINAL ACTION

174. Applicant's amendments or new IDS necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

175. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eduardo Garcia-Otero whose telephone number is 703-305-0857. The examiner can normally be reached on Tuesday through Friday from 9:00 AM to 7:00 PM. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kevin Teska, can be reached at (703) 305-9704. The fax phone number for this group is 703-872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist, whose telephone number is (703) 305-3900.

* * * *


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